REMARKS

Claims 68, 70, 76, 79, 85 and 86 are amended. Claims 60-63, 69 and 82 are cancelled. Claims 64-68, 70-81 and 83-86 are pending in the application.

Claims 60-63 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Spuler et al., U.S. Patent No. 5,935,873; Nobuhisa, JP 10-223758; or McAnally, U.S. Patent No. 6,136,700. Claims 60-63 also stand rejected under 35 U.S.C. § 112, first paragraph. Without admission as to the propriety of the Examiner's rejections, claims 60-63 are cancelled.

Claims 64-86 stand rejected under 35 U.S.C. § 103(a) as being obvious over applicant's admitted prior art in view of one or more of Spuler, Nobuhisa and McAnally. A proper § 103(a) obviousness rejection requires that the references, as combined, teach or suggest every limitation of the claim. Claims 64-86 are allowable over the various cited combinations of the applicant's prior art, Spuler, Nobuhisa and McAnally, for at least the reason that, as combined, the cited art combinations fail to teach or suggest every limitation recited in any of these claims.

Independent claim 64 recites a conductive gate having sidewalls and sidewall spacers which extend along the sidewalls and have a thickness of less than or equal to about 500Å. The applicant's admitted prior art discloses wordlines having opposing sidewall edges and sidewall spacers that extend along the side wall edges (see applicant's specification at pg 4, lns 3-4). Applicant's specification notes that the thickness of prior art spacers is typically at least

about 2,000 Angstroms (page 16, lines 11-13). Applicant's prior art does not teach or suggest the recited sidewall spacers having thickness of less than or equal to about 500Å. McAnally discloses forming insulating sidewalls (spacers) which may provide increased selectivity for an etch process (col 3, lns 29-40 and Fig. 1). McAnally does not teach or suggest the recited sidewall spacer having a thickness of less than or equal to about 500Å. Neither Spuler nor Nobuhisa teach or suggest sidewall spacers. As combined, applicant's prior art, in view of one or more of McAnally, Spuler and Nobuhisa, fails to disclose or suggest the recited sidewall spacers extending along a sidewall of a conductive gate, the spacers having a thickness of less than or equal to about 500Å

A range (thickness) limitation is not obvious when such confers a benefit. The benefits accomplished by the recited thickness of less than or equal to 500Å are set forth in the applicant's specification. Applicant directs attention to the disclosure at page 16, lines 15-23, which specifically states that, relative to the thicker layers disclosed in the prior art, the thickness of less than 500Å provides additional room for capacitor construction and enables more charge to be stored. Because the combined art fails to teach or suggest the recited sidewall spacers having thickness of less than or equal to about 500Å, and because this recited feature confers a distinct benefit, independent claim 64 is non-obvious and is allowable over the cited combinations of references.

Dependent claims 65-67 are allowable over applicant's prior art in view of one or more of McAnally, Nobuhisa and Spuler, for at least the reason that they depend from allowable base claim 64.

Independent claim 68, as amended, recites a storage node extending along and against a material that comprises from about 2% to about 20% carbon (by weight). The amendment to claim 68 is supported by the specification at, for example, page 14, lines 5-11; and Figs. 7 and 9, and the corresponding text. Applicant's prior art discloses capacitor constructions that extend through an insulative layer to contact node locations (pg 4, lns 13-23). Applicant's prior art does not disclose or suggest the recited storage node that extends along and against a material that comprises from about 2% to about 20% carbon. Spuler teaches formation of a bitline contact opening (col 1, lns 34-50) and filling the contact opening with W, Al or Cu to form a contact (col 4, lns 2-4). Spuler does not teach or suggest the recited storage node that extends along and against a material that comprises from about 2% to about 20% carbon. Nobuhisa also discloses formation of a contact opening and discloses that the opening can be filled with tungsten (see ¶ 0027). Nobuhisa does not disclose or suggest the recited storage node extending along and against a material that comprises from about 2% to about 20% carbon. McAnally discloses forming a self-aligned contact by forming a contact opening and filling the opening with conductive material (col 5, lns 30-32). McAnally further discloses the presence of a stopping layer during contact opening formation, wherein the stopping layer

can contain "some carbon" (col 5, lns 10-18). McAnally does not disclose or suggest the recited storage node extending along and against a material that comprises from about 2% to about 20% carbon. Applicant's prior art, as combined with one or more of Spuler, Nobuhisa and McAnally, fails to disclose or suggest the recited storage node extending along and against a material that comprises from about 2% to about 20% carbon. Independent claim 68 is therefore allowable over this combination of references.

Dependent claims 70-75 are allowable over the cited combinations of applicant's prior art as combined with Spuler, Nobuhisa and McAnally, for at least the reason that they depend from allowable base claim 68.

Independent claim 76, as amended, recites a pair of wordlines and sidewall spacers extending along sidewall edges of the wordlines. Claim 76 further recites a carbon-containing material proximate the wordlines where the carbon-containing material comprises from about 2% to about 20% carbon, and at least one of a first storage node, a second storage node, and a bitline contact being in physical contact with the carbon-containing material. The amendment to claim 76 is supported by the specification at, for example, page 14, lines 5-11; page 17, lines 12-14; and page 17, lines 4-8. As discussed above, applicant's prior art does not disclose or suggest the recited carbon-containing material comprising from about 2% to about 20% carbon. As discussed above, Spuler and Nobuhisa fail to disclose or suggest sidewall spacers extending along sidewall edges of wordlines. As discussed above, McAnally does not disclose or suggest carbon-

containing material proximate wordlines where the carbon-containing material comprises form about 2% to about 20% carbon. Independent claim 76 is therefore allowable over the cited combinations of the applicant's prior art, Spuler, Nobuhisa and McAnally.

Dependent claim 79 is amended to properly depend from amended claim 76. Dependent claims 77-81 and 83-86 are allowable for at least the reason that they depend from allowable base claim 76.

Claims 85 and 86 stand rejected under 35 U.S.C. § 112, first paragraph. The Examiner states that these claims are non-enabled because the specification does not reasonably provide enablement for materials containing silicon, oxygen and nitrogen or containing silicon, nitrogen, oxygen and carbon. Without admission as to the propriety of the Examiner's rejection, applicant has amended claims 85 and 86 to recited silicon, nitrogen and carbon. Accordingly, applicant respectfully requests withdrawal of the § 112 rejection of claims 85 and 86 in the Examiner's next action.

Claims 70, 72 and 73 stand objected to under double patenting based upon being substantial duplicates . Similarly, claims 60 and 62, claims 74 and 75, claims 83 and 84, and claims 85 and 86 stand objected to as being substantial duplicates. The Examiner stated that claims 70 and 72 are exact duplicates. Applicant has amended claim 70 to recite a material comprising silicon and carbon, which is different in scope from the claim 72 recitation of a material comprising silicon, oxygen and carbon. Accordingly, applicant respectfully

requests withdrawal of the double patenting objection to claim 70 in the Examiner's next action.

With respect to claims 72, 73, 60, 62, 74, 75, 83, 84, 85 and 86, applicant directs attention to MPEP § 2111.03. This section of the MPEP discusses the transitional phrases "comprising", "consisting essentially of" and "consisting of". Section 2111.03 states that these transitional phrases "define the scope of a claim with respect to what un-recited additional components or steps are excluded from the scope of the claim". It is clearly recognized that the transitional term "comprising" confers a different scope than the transitional term "consisting essentially of". Claim pairs 60 and 62, 72 and 73, 74 and 75, 83 and 84, and 85 and 86, are therefore allowable since each member of a given pair varies in scope relative to the other member of the pair. Accordingly, applicant respectfully requests withdrawal of the double patenting objection to claims 60, 62, 72, 73, 74, 75, 83, 84, 85 and 86 in the Examiner's next action.

For the reasons discussed above, claims 64-68, 70-81 and 83-86 are allowable. Accordingly, applicant respectfully requests formal allowance of such claims in the Examiner's next action.

Respectfully submitted,

Dated: November 26, 2001

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Application Serial No. 09/603,147
Filing Date ..... June 23, 2000
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Group Art Unit 2813
Examiner ..... Kielin, E.
Attorney's Docket No. MI22-1443
Title: Capacitor Constructions, DRAM Constructions and Semiconductive Material Assemblies

VERSION WITH MARKINGS TO SHOW CHANGES MADE ACCOMPANYING RESPONSE TO OCTOBER 4, 2001 OFFICE ACTION

In the Claims

The claims have been amended as follows. Underlines indicate insertions and ~~strikeouts~~ indicate deletions.

60. (Cancelled).

61. (Cancelled).

62. (Cancelled).

63. (Cancelled).

68. (Amended) A capacitor construction, comprising:

a storage node extending within an insulative layer, at least a portion of the storage node extending along and against a material that comprises from about 2% to about 20% carbon (by weight);

a second electrode proximate the storage node; and

a dielectric layer between the second electrode and the storage node.

69. (Cancelled).

70. (Amended) The capacitor construction of claim 68 wherein the material comprises silicon~~, oxygen~~ and carbon.

76. (Amended) A DRAM construction, comprising:

a pair of wordlines over a substrate, the wordlines comprising sidewall edges;

sidewall spacers extending along the sidewall edges of the wordlines;

three nodes proximate the wordlines, the three nodes comprising a first node, second node and third node, the second node being in gated electrical connection with the first node through one of the wordlines and being in gated electrical connection with the third node through the other of the wordlines;

a carbon-containing material proximate the wordlines, the carbon-containing material comprising from about 2% to about 20% carbon;

an insulative layer over the etch stop;

a first capacitor construction in electrical connection with the first node, the first capacitor construction comprising a first storage node;

a second capacitor construction in electrical connection with the third node, the second capacitor construction comprising a second storage node; and

a bit line contact in electrical connection with the second node, at least one of the first storage node, second storage node and bit line contact being in physical contact with the carbon-containing material.

79. (Amended) The DRAM construction of claim 76 wherein at least the sidewall spacers comprise the carbon-containing material ~~is adjacent the wordlines as sidewall spacers along sidewall edges of the wordlines~~.

82. (Cancelled)

85. (Amended) The DRAM construction of claim 76 wherein the carbon-containing material comprises silicon, ~~oxygen and~~ nitrogen and carbon.

86. (Amended) The DRAM construction of claim 76 wherein the carbon-containing material consists essentially of silicon, ~~oxygen and~~ nitrogen and carbon.

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